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Severity of acute respiratory distress syndrome resulting from tuberculosis correlates with bronchoalveolar lavage CXCL-8 expression

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ABSTRACT

Tuberculosis (TB) has previously been linked to acute respiratory distress syndrome (ARDS). Here this study investigates the link between inflammation and TB in ARDS by measuring inflammatory cytokine and chemokine levels in bronchoalveolar lavage (BAL) from 90 patients with TB or ARDS alone and in patients with TB-induced ARDS (ARDS + TB). BAL was collected by fiber-optic bronchoscopy, and the concentrations of interleukin (IL)-6, CXCL8, TNF α and IL-1β were measured by ELISA. CXCL8 levels in BAL were significantly higher in the ARDS + TB group compared with TB and ARDS alone groups. Disease severity in the ARDS + TB group as determined by Murray score correlated with BAL CXCL8 and neutrophils, but not with IL-6, IL-1β and TNF α concentrations. In addition, CXCL8 levels and neutrophils were increased in non-miliary TB versus miliary TB. This difference in CXCL8 was lost in the presence of ARDS. It was concluded from this study that CXCL8 may play an important role in the pathogenesis of this form of ARDS. This further suggests that CXCL8 inhibitors or blockers may be useful to control the onset and/or development of these combined diseases.

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